

Claims

1. An active messaging system in communication with a short text messaging service of a digital cellular telephone system, comprising:
 - an active messaging client stored in a computer readable medium of a digital cellular telephone, the active messaging client providing interpretation and execution of an active message script included in a short text message received at the digital cellular telephone by radiant transmission; and
 - an active message gateway in communication with the short text messaging service to receive short text messages from the digital cellular telephone and selectively forwarding the short text messages according to whether they include an active message script.
2. The system of claim 1 in which the active messaging client includes an active messaging loader that distinguishes and directs short text messages according to whether they include an active message script.
3. The system of claim 2 in which each short text message includes a header and the short text messages that have an active message script include an indication of the active message script in the header.
4. The system of claim 2 in which the active messaging client includes an active message interpreter to which the active messaging loader directs short text messages that include an active message script, the active message interpreter providing interpretation and execution of the active message script.
5. The system of claim 2 in which the active messaging client includes an active message file manager to which the active messaging loader directs short text messages that include an active message script, the active message file manager providing storage of the active message script in a file system included on the digital cellular telephone.
6. The system of claim 1 in which the active messaging client includes an active message interpreter that receives the active message

script and provides interpretation and execution of the active message script.

7. The system of claim 1 in which the active messaging client includes an active message file manager that receives the active message script and provides storage of the active message script in a file system included on the digital cellular telephone.

8. The system of claim 1 further comprising one or more application servers in communication with the active message gateway, each of the one or more application servers providing an active message application or service in response to a request directed from the digital cellular telephone.

9. The system of claim 8 in which the active message gateway includes an active messaging connector service that provides communication between the short text messaging service and one or more active message service interfaces to the one or more application servers.

10. In a computer readable medium of a digital cellular telephone, active messaging client software for active messages transmitted via a short text messaging service, comprising:

active messaging loader software that distinguishes and directs short text messages according to whether they include an active message script; and

active message interpreter software to which the active messaging loader directs short text messages that include an active message script, the active message interpreter providing interpretation and execution of the active message script.

11. The medium of claim 10 in which each short text message includes a header and the short text messages that have an active message script include an indication of the active message script in the header.

12. The medium of claim 10 further including active message file manager software to which the active messaging loader directs short text messages that include an active message script, the active message

file manager providing storage of the active message script in a file system included on the computer readable medium.

13. The medium of claim 10 in which the digital cellular telephone includes a subscribed identity module with a computer readable medium and in which the active messaging loader software and the active message interpreter software are stored on the computer readable medium of the subscriber identity module.

14. The medium of claim 10 in which active message interpreter includes a global string buffer (GB) that is used for building character strings and a last result buffer (LRB) that is used for storing a most recent result.

15. The medium of claim 10 in which the active message script includes text strings and jumps, wherein all text strings are prefixed with their byte-size and all jumps are made to specific byte locations within the script.

16. The medium of claim 10 in which active message script are a format:

<Instruction><Flags>[<Data>][<Address>]

wherein <Instruction> specifies a command to be executed, <Flags> specifies one or more options for the command, <Data> specifies any data associated with the command, and <Address> is a byte-address of an instruction to be executed under predefined conditions related to the command.

17. In a computer readable medium of a digital cellular telephone, an active message script data structure for active messages transmitted via a short text messaging service, comprising:

<Instruction><Flags>[<Data>][<Address>]

wherein <Instruction> field specifies a command to be executed, <Flags> field specifies one or more options for the command, <Data> field specifies any data associated with the command, and <Address> field is a byte-address of an instruction to be executed under predefined conditions related to the command.

18. The medium of claim 17 further including a print instruction associated with the instruction field for printing a text string, destination flags associated with the flag field specifying whether the text string is to be printed to from a memory buffer, and a text string associated with the data field and representing the text string to be printed.

19. The medium of claim 17 further including an input instruction associated with the instruction field for printing a text string and requesting input from a user, content identification flags associated with the flag field optionally specifying the text string is to be printed, and a text string associated with the data field and optionally representing the text string to be printed.

20. The medium of claim 17 further including a select instruction associated with the instruction field for printing a plurality of text strings, destination flags associated with the flag field specifying a location to which a user selection is to be returned, and plural text strings associated with the data field and representing the plural text string to be printed.

21. The medium of claim 17 further including a condition instruction associated with the instruction field for comparing a pair of condition strings and jumping to a specified address when the pair of condition strings satisfies a predefined condition, flags associated with the flag field optionally specifying one of the condition strings and optionally specifying the predefined condition, and a text string associated with the data field and optionally representing one of the condition strings.

22. The medium of claim 17 further including a send message instruction associated with the instruction field for transmitting a short text message, destination flags associated with the flag field optionally specifying a destination for the short text message, and a text string associated with the data field and optionally specifying a destination for the short text message.

23. The medium of claim 17 further including a call instruction associated with the instruction field for initiating a telephone call,

destination flags associated with the flag field optionally specifying a telephone number for the telephone call, and a text string associated with the data field and optionally specifying a telephone number for the telephone call.

24. The medium of claim 17 further including a location instruction associated with the instruction field for obtaining location information about a location of the digital cellular telephone, and a destination flag associated with the flag field optionally specifying where the location information is to be stored.

25. The medium of claim 17 further including an execute instruction associated with the instruction field for initiating execution of an active message file stored on the digital cellular telephone, a file identification flag associated with the flag field optionally identifying the active message file to be executed, and a text string associated with the data field and optionally identifying the active message file to be executed.

26. The medium of claim 17 further including an execute instruction associated with the instruction field for initiating execution of an active message file stored on the digital cellular telephone, a file identification flag associated with the flag field optionally identifying the active message file to be executed.

27. The medium of claim 17 further including a goto instruction associated with the instruction field for directing execution of the active message script to jump to a specified byte location in the script, and a byte address flag associated with the address field for identifying the byte location for the script to jump to.

28. The medium of claim 17 further including an addressbook instruction associated with the instruction field for directing retrieval of information from an addressbook stored on the digital cellular telephone, and an addressbook entry flag associated with the flag field for specifying one or more addressbook entries to be retrieved.

29. The medium of claim 17 further including an application instruction associated with the instruction field for identifying an application to be utilized by another service.

30. In a mobile telephone short text messaging system, an active message gateway method for short text messages that include an active message script, comprising:

receiving at an active message gateway short text messages transmitted from a mobile telephone;

distinguishing among the short text messages ones that include an active message script from ones that do not include an active message script, the short text messages that do not include an active message script including destination addresses corresponding to short text messaging destinations;

forwarding the short text messages that do not include an active message script to the short text messaging destinations corresponding to the destination addresses;

interpreting the active message script in the short text messages that include it and transmitting any corresponding response.

31. The method of claim 30 further comprising authenticating that the mobile telephone is associated with the active message gateway prior to interpreting the active message script.

32. The method of claim 30 further comprising:

determining whether the active message script is to be executed locally by the active message gateway or remotely by an application server that is in computer network communication with the active message gateway; and

executing the active message script at the active message gateway or the remote application server according to the determination.

33. The method of claim 32 wherein the active message script is executed at the remote application server, the method further comprising re-formatting the active message script at the active message gateway

before transmitting the active message script to the remote application server for execution.

34. The method of claim 33 in which the active message script is re-formatted into an XML file format.

35. The method of claim 30 further comprising:

determining whether the active message script is to be executed locally by the active message gateway or remotely by another mobile telephone; and

executing the active message script at the active message gateway or at the other mobile telephone according to the determination.

36. In a computer readable medium of a mobile telephone short text messaging system, active message gateway software for short text messages that include an active message script, comprising:

software for receiving at an active message gateway short text messages transmitted from a mobile telephone;

software for distinguishing among the short text messages ones that include an active message script from ones that do not include an active message script, the short text messages that do not include an active message script including destination addresses corresponding to short text messaging destinations;

software for forwarding the short text messages that do not include an active message script to the short text messaging destinations corresponding to the destination addresses;

software for interpreting the active message script in the short text messages that include it and transmitting any corresponding response.

37. The medium of claim 36 further comprising software for authenticating that the mobile telephone is associated with the active message gateway prior to interpreting the active message script.

38. The medium of claim 36 further comprising:

software for determining whether the active message script is to be executed locally by the active message gateway or remotely by an

application server that is in computer network communication with the active message gateway; and

software for executing the active message script at the active message gateway or the remote application server according to the determination.

39. The medium of claim 38 wherein the active message script is executed at the remote application server, the method further comprising software for re-formatting the active message script at the active message gateway before transmitting the active message script to the remote application server for execution.

40. The medium of claim 39 in which the active message script is re-formatted into an XML file format.

41. The medium of claim 36 further comprising:

software for determining whether the active message script is to be executed locally by the active message gateway or remotely by another mobile telephone; and

software for executing the active message script at the active message gateway or at the other mobile telephone according to the determination.

42. The medium of claim 36 further comprising a GetServiceList active message command data structure that returns to the mobile telephone a list of services available through the active message gateway.

43. The medium of claim 36 further comprising a GetService active message command data structure that provides a request for a particular service via the active message gateway.

44. The medium of claim 36 further comprising an InstallService active message command data structure that functions to obtain active message script for a service and install the active message script on the mobile telephone.

45. The medium of claim 36 further comprising a GetUserList active message command data structure that returns a list of users available through the active message gateway.

46. The medium of claim 36 further comprising a GetUser active message command data structure that returns information about or establishes a connection with a user available through the active message gateway.

47. The medium of claim 36 further comprising an AddUser active message command data structure that adds a designated user to a list of selected users maintained in association with the mobile telephone.

48. The medium of claim 36 further comprising a DeleteUser active message command data structure that deletes a user from a list of selected users maintained in association with the mobile telephone.

49. The medium of claim 36 further comprising a SendActiveMessage active message command data structure that sends a short text message that includes active message script.

50. The medium of claim 36 further comprising a SendMessage active message command data structure that sends a short text message that does not include active message script.